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(51) INT CL<sup>5</sup>  
**G02C 11/00, H04B 1/08**

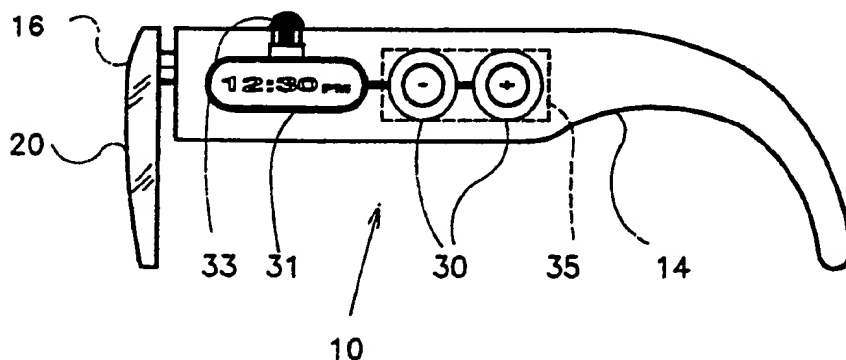
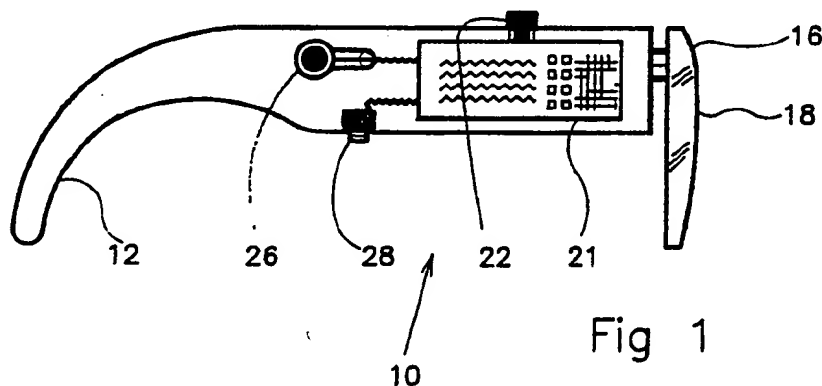
(52) UK CL (Edition M )  
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**U1S S1065 S2205**

(56) Documents Cited  
**GB 1201461 A** **EP 0162184 A1** **US 5020150 A**  
**US 4902120 A** **US 4882769 A** **US 4856086 A**

(58) Field of Search  
**UK CL (Edition M ) G2J JS2AX1, H3Q QACA QACX**  
**INT CL<sup>5</sup> G02C, H04B**

**(54) Spectacle frame with a radio and alarm clock**

(57) A pair of spectacles is provided in which the various basic components of a radio are mounted together with an automatic frequency tuning device 22 which is operable by touch. A pair of spectacles is also provided in which the basic various components of a radio are mounted together with an alarm clock 31. Power may be supplied by batteries 30 or a solar cell in which case a sliding door 35 can open to catch the sun's rays. Power and volume switch 26 and headphone plug 28 are shown.

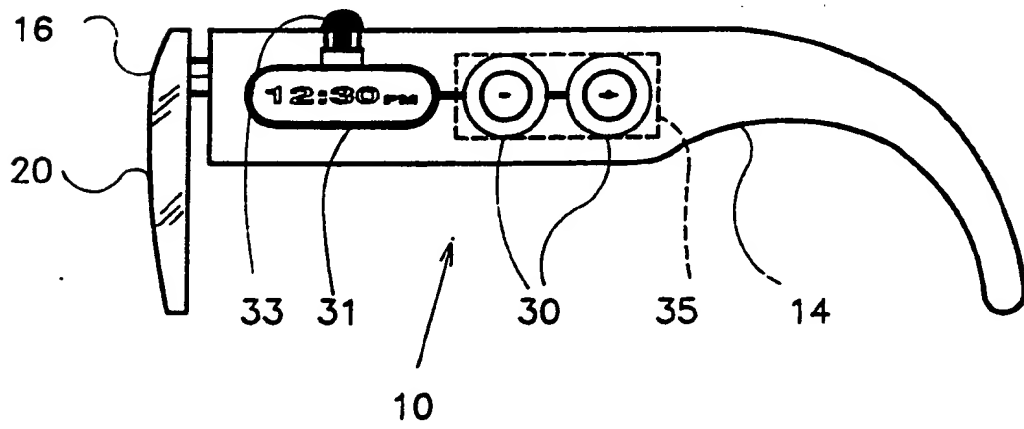
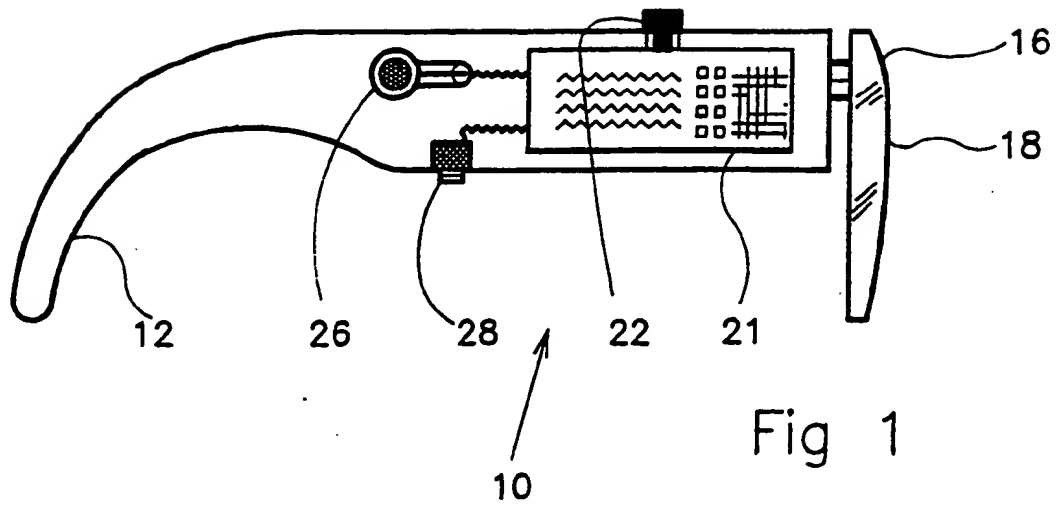


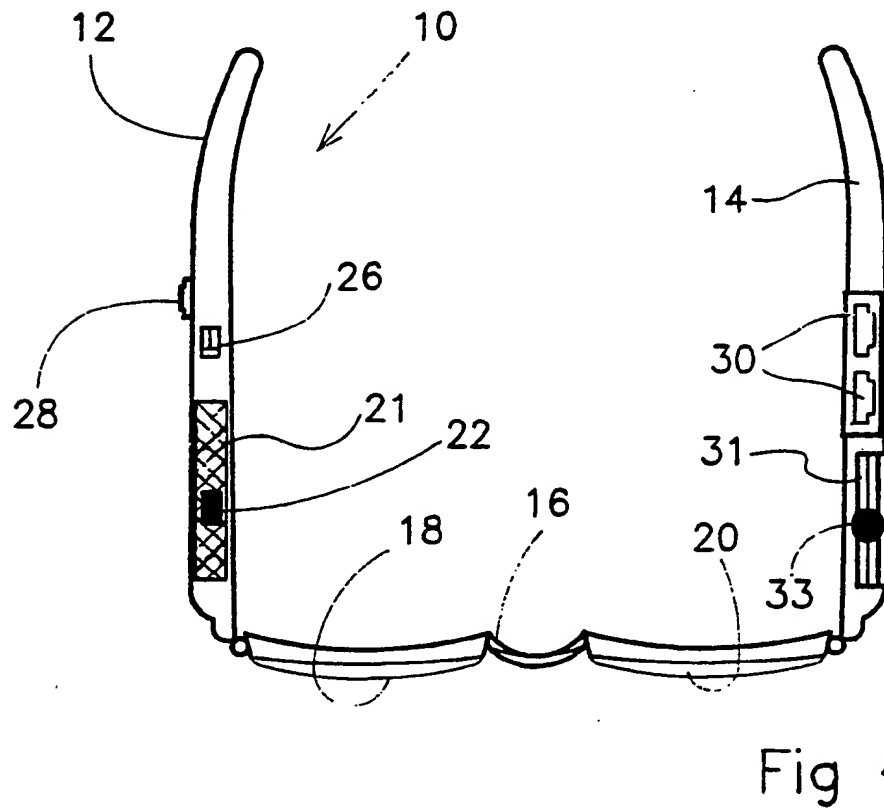
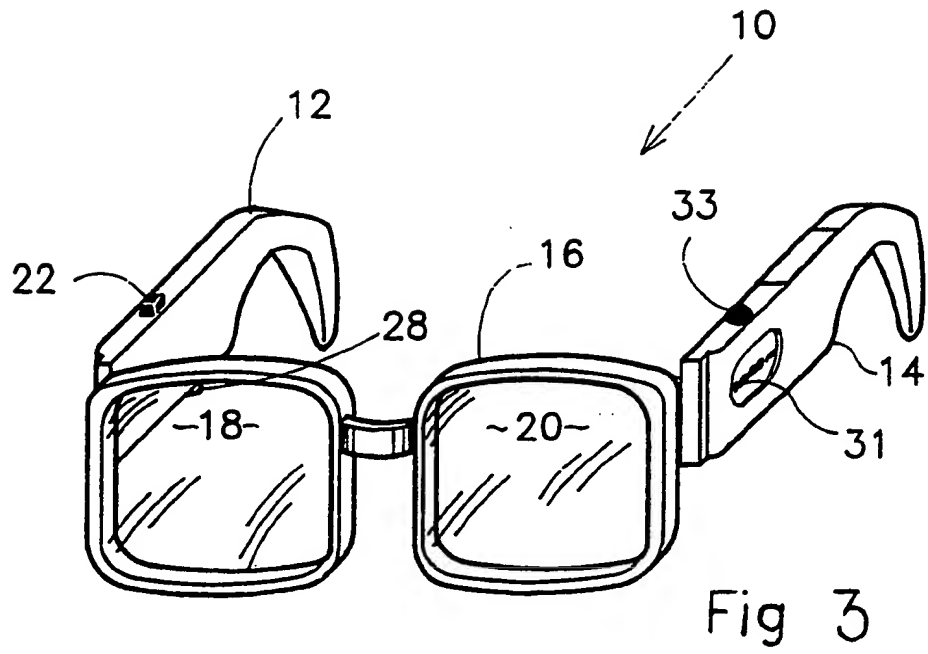
**Fig 2**

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1990.





IMPROVEMENTS IN AND RELATING TO A RADIO

5                    This invention relates to an improvement in a radio,  
and in particular transportation of a radio by its user.

                  Ordinary radios, when they need to be used by a user  
on the move have to be carried by a user. Portable radios are also  
known, which have to be clipped to the waist belt of the user when  
10    moving.

                  In accordance with one aspect of the invention, a pair  
of spectacles is provided in which the various basic components of  
a radio are mounted together, an automatic frequency tuning device  
which is operable by touch.

15                In accordance with another aspect of the invention, a pair of  
spectacles is provided in which the basic various components of a  
radio are mounted together with an alarm clock.

                  Such arrangements are particularly advantageous in  
that the radio can be easily transported by a user without the hassle  
20    of having to either physically carry by hand the radio, or to attach  
the radio of the waist belt of the user. Furthermore, the automatic  
frequency tuning touch function is advantageous in that it is easy to  
operate, whilst the alarm clock function is advantageous in that it will  
provide a reminder function to the spectacle user, for instance a  
25    reminder of the start of a favourite programme on the radio.

                  Suitably the main components of the radio are mounted

within the two arms of the spectacles, whereby externally the spectacles will look no different from ordinary spectacles other than a few small buttons. Suitably one arm of the radio carries the power supply in the form of batteries, whilst the other arm carries the  
5 integrated circuit for the radio together with the channel selector, power and volume switch, receiver and headphone plug.

Preferably, the various components of the radio are mounted on the spectacles such that the pair of spectacles is properly balanced on the user's head during use. In this regard, the  
10 positioning of a component at a particular point on the pair of spectacles is relevant. Furthermore, one or more extra weights (which may be in the form of another feature eg alarm device) may be provided on the pair of spectacles to balance the weight thereof.

Suitably the arms of the spectacles are connected by a  
15 power cable in order to provide power from the batteries to the rest of the radio. Preferably, the power cable extends between the inner ends of the arms through the frame of the spectacles.

Alternatively, the power cable extends between the outer ends of the arms such that the cable also acts as a retaining  
20 means for the spectacles, whereby when the spectacles are removed from the head, the spectacles can be supported around the neck of the user.

Suitably the arrangement can be used with ordinary spectacles or with sunglasses.

The invention will now be described by way of example with reference to the accompanying drawings in which:

Figure 1 shows the right side view of the spectacles with radio in accordance with the invention;

5        Figure 2 shows the left side view of the spectacles of Figure 1;

Figure 3 is the front view from above of the spectacles of Figure 1; and

Figure 4 is the plan view of the spectacles of Figure 1.

10        In the drawings, a combined hi-fi radio and spectacle unit 10 is shown comprising a pair of spectacles having two arms 12 and 14 interconnected via a frame portion 16 of the spectacles which mount the eyeglasses 18 and 20.

On the right side arm 12 of the spectacles (see Figure 15        1), an integrated circuit 21 for the radio, a channel selector in the form of an automatic frequency tuning touch button 22, a power and volume switch 26 and a headphone plug 28 are mounted.

On the left side arm 14 of the spectacles (see Figure 2), a power supply for the radio in the form of batteries 30 are 20        mounted together with an alarm clock 31 and associated setting button 33. Suitably the batteries 30 are rechargeable button cells or a solar cell. If a solar cell is used, the spectacle unit also has a sliding door 35 which can open to catch the sun's rays in order to power the solar cell. The batteries 30 power both the radio and the

alarm clock 31.

The various components of the radio are mounted on the spectacles 10 such that the spectacles are properly balanced on the user's head during use. In particular, the various components are positioned at particular points on the arms 12 and 14 in order to obtain proper balancing. In an arrangement not shown, extra weight (eg in the form of an alarm device) may be provided on the spectacles in order to achieve better balancing.

The two arms 12 and 14 are interconnected by a power cable (not shown) passing through the frame portion 16 via the inner ends of the two arms in order to provide power from the batteries 30 to the other components of the batteries mounted on the other arm. Alternatively in an arrangement not shown the cable can extend between the outer ends of the arms 12 and 14, and in this arrangement the cable also acts as a means to retain the combined radio and spectacle unit 20 around the neck of the user, when the combined radio and glasses is removed from the head.

In another arrangement now shown, the headphone plug 28 is replaced by two small speaker earpieces, one connected by a cable to the outer end of the arm 12, and the other being connected by a cable to the outer end of the arm 14.

Suitably the eyeglasses 18 and 20 of the spectacle unit 20 are either prescription (for users with long or short sightedness) or sunglasses.

Such an arrangement is simple yet effective in that a radio can be transported with little effort, and without hassle, and in particular without having to be carried everywhere, and such overcomes the problems of prior art arrangements. Furthermore, the  
5 arrangement externally looks like ordinary spectacles, save for a few small buttons.



## CLAIMS

1.           A pair of spectacles wherein the various basic components of a radio are mounted therewith, the arrangement  
5 including an automatic frequency tuning device which is operable by touch.
2.           A pair of spectacles wherein the basic various components of a radio are mounted therewith together with an alarm clock.
- 10 3.           A pair of spectacles as claimed in either claim 1 or 2 wherein the main components of the radio are mounted within the two arms of the spectacles.
4.           A pair of spectacles as claimed in any preceding claim wherein one arm of the spectacles carries a power supply in the form  
15 of batteries.
5.           A pair of spectacles as claimed in claim 4 wherein the other arm carries the integrated circuit for the radio together with the channel selector, power and volume switch, receiver and headphone plug.
- 20 6.           A pair of spectacles as claimed in claim 5 wherein the arms of the spectacles are connected by a power cable in order to provide power from the power supply to the rest of the radio.
7.           A pair of spectacles as claimed in claim 6 wherein the power cable extends between the inner ends of the arms through the

frame of the spectacles.

8. A pair of spectacles as claimed in claim 6 wherein the power cable extends between the outer ends of the arms.

9. A pair of spectacles as claimed in any preceding claim  
5 wherein the various components of the radio are mounted on the spectacles such that the pair of spectacles is weight balanced.

10. A pair of spectacles as claimed in any preceding claim wherein one or more extra weights may be provided on the pair of spectacles to balance the weight thereof.

10 11. A pair of spectacles as claimed in any preceding claim wherein the arrangement can be used with ordinary spectacles or with sunglasses.

**Relevant Technical Fields**

- (i) UK Cl (Ed.L) G2J (JS2AX1); H3Q (QACX, QACA)  
(ii) Int Cl (Ed.5) G02C, H04B

Search Examiner  
MR C J ROSS

Date of completion of Search  
4 JANUARY 1994

**Databases (see below)**

- (i) UK Patent Office collections of GB, EP, WO and US patent specifications.

Documents considered relevant following a search in respect of Claims :-  
1 and appendant claims

(ii)

**Categories of documents**

- X: Document indicating lack of novelty or of inventive step. P: Document published on or after the declared priority date but before the filing date of the present application.  
Y: Document indicating lack of inventive step if combined with one or more other documents of the same category. E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.  
A: Document indicating technological background and/or state of the art. &: Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages		Relevant to claim(s)
X	GB 1201461	(AEC)	1
X	EP 0162184 A1	(TARKANYI)	1
X	US 5020150	(SHANNON)	1
X	US 4902120	(WEYER) See especially Figure 4 and part 52	1
X	US 4882769	(GALLIMORE)	1
X	US 4856086	(McCULLOUGH)	1

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).